

Superconducting Devices for Millimeter Through Far-Infrared Detection

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Superconductivity offers solutions for many difficult technical problems that arise when developing sensitive detection systems for long-wavelength astrophysics. A variety of superconducting devices are being developed at JPL and Caltech, with the goal of enabling future missions such as CMBPol and SAFIR. Examples include narrow-beam planar antenna arrays, dual-polarization antennas, antenna-coupled TES bolometers, on-chip filters and switches, and kinetic inductance detectors. Much of this work builds on our previous experience with semiconducting bolometers and superconducting mixers.